



About the University of Michigan's Office of Engineering Outreach and Engagement (OE)²

(OE)² focuses on three areas of effort:

- 1) to promote diversity within the College of Engineering (CoE);
- 2) to serve as a resource for CoE faculty, K-12 educators, potential students and parents, and
- 3) to contribute to the community at large.

To promote diversity within the CoE, (OE)² encourages and facilitates efforts of CoE faculty, scholars, students and staff to motivate, prepare, educate, and support outstanding, qualified students from diverse backgrounds within the State of Michigan who would benefit from entering the engineering field.

(OE)² staff look for opportunities to support existing CoE outreach efforts and also “incubate” new, innovative programs or replicate best practices in pilot settings. (OE)² staff provide assistance with grant proposals that require outreach planning and implementation; facilitate assessment and evaluation of research-based programs; coordinate with other groups across campus; and explore collaboration opportunities with other groups. This support is ongoing, grounded in the engineering research efforts of the College, to develop lasting relationships that increase public awareness regarding the importance and integrative nature of engineering.

To maintain relevance and immediacy, (OE)² continuously evaluates its efforts. In early 2007, (OE)² staff conducted an initial assessment of existing College-sponsored programs to identify UM CoE source strengths in the context of its outreach statement. The information, coupled with what we are learning from our pilot programs, provide data on which to base future plans. The (OE)² website provides visibility and information exchange to its internal and external constituents, <http://www.engin.umich.edu/outreach/>

Pilot Programs

(OE)² aids in development and support of mutually beneficial partnerships with those entities whose goals align with its statement of purpose. These include

- K-12 Schools, Districts and Intermediate Districts;
- Community Colleges, 4-Year Colleges, and Universities; and
- Museums and Science Centers.

K-12 Schools: K-12 Partnership Project.

In 2006, (OE)² and K-12 administrators from Ypsilanti Public School District (YPSD) crafted a joint agreement to launch a pilot partnership. The program takes a holistic approach that provides benefits to all partners: UM graduate and undergraduate students, secondary school science and mathematics teachers, students, and their parents. This term, seven UM CoE graduate students are working in 11 teachers' classrooms as teaching assistants (TAs). Two additional graduate students are working as (OE)²



outreach coordinators. TAs contribute experiential knowledge to curricular concepts, act as role models and mentors to students, and receive pedagogical training. Fifteen undergraduate students work with the TAs as tutors, to augment the mentoring. Eleven participating teachers are “CoE Faculty Affiliates,” and are offered enhancements to their own professional development such as summer research experiences, invitations for campus visits and events, and special meetings with faculty. Through the new “Parent Learning Communities,” 30 YPSD parents are invited to meet together once a month for a year to focus on how to help their children achieve and pursue a college education, to become experts in “college knowledge,” and to consider enhancing their own educational trajectory. These parents are change agents in the District and are expected to start up new cohorts of Parent Learning Communities after the pilot year.

Southfield Public Schools (including its new Engineering and Manufacturing Sciences Academy) and selected schools in Detroit will be adopting components of the YPSD Partnership in the next year.

Other Colleges (2-year and 4-year)

(OE)² has helped craft an articulation agreement for a model dual degree program with UM-Flint. (OE)² works to augment the recruitment, transition support and retention activities related to transfer students from community colleges such as Washtenaw Community College, Henry Ford Community College, and FOCUS: Hope. Its staff coordinate with directors and staff from the CoE Recruitment and Admissions, Multicultural Engineering Programs Office (MEPO), and the Women in Science and Engineering (WISE) offices. The primary work is in pipeline programs – smoothing out the “Learning Continuum” and offering alternative pathways into engineering for a more diverse student population.

Museums, Science Centers and Other Outreach Organizations

(OE)² works in partnership with the UM Museum of Natural History to help translate faculty research for the public via exhibit development and educational programs for learners of all ages. (OE)² is part of a larger network of outreach and engagement professionals and hosts a NSF-funded, interactive website designed to provide tools, information and resources to the outreach community: [**www.neo-sphere.org**](http://www.neo-sphere.org)

Faculty Research Program and Proposal Support

(OE)² staff provide proposal development support to CoE faculty and faculty from other UM Units – especially large, interdisciplinary initiatives that require complex education, outreach and diversity plans. Our purpose is to provide advice, guidance, and information based on what we learn about the nature of the proposed project, and how the PI envisions the educational outreach and diversity components aligning or integrating with the research.